



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Environmental Control and Safety

2122-3-E2702Q043

Aims

Introduce students to the main issues of safety and environmental control, so that they can learn the theories and management and operational methods, arriving at knowing how to choose the most appropriate methods of evaluation and management to be applied.

Knowledge and understanding

at the end of the course the student will have learned:

- the methodologies for risk assessment, environmental impact, process control
- the methods for calculating the exposure and the level of risk
- the reference legislation

Knowledge and application skills

at the end of the course the student will be able to:

- identify the hazards
- calculate the associated risk
- identify the most appropriate instrumentation and process control
- interface with the relevant legislation

Contents

Concepts of hazard and risk, their identification and measurement, impacts on human safety and the environment, reference regulations and reference to international standards.

Detailed program

General concepts and principles: hazard, risk, environmental impact, prevention, protection, exposure, barriers, ALARP, safety culture, risk analysis, training and information

Main legal obligations and roles regarding health, safety in the workplace and environmental protection in Italy: Legislative Decree 81, 152, 105; European regulations: REACH, CLP, ADR / RID; national and international bodies, standards and certifications: ISO, OSHAS, INAIL

Main risks related to the work environment: chemical, biological and physical agents, electrical, fire and explosions, confined spaces, other agents ...; threshold limit value (TLV), individual and collective protection devices

Chemical risk: properties of substances and reaction runaways

Techniques and methodologies: management system, environmental and health impact assessment, hazard identification and risk analysis (check list, root cause, HAZOP, FMEA) work permits, safety data sheets and labeling

Instrumentation and safety systems

Introduction to Life Cycle Assessment (LCA)

Prerequisites

Basic concepts on chemical plants, instrumentation and processes

Teaching form

Frontal lesson with the help of slides provided to students

Textbook and teaching resource

Slides provided to students

Semester

3rd year, 2nd semester

Assessment method

Oral interview on the topics covered in class

Office hours

On appointment
